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Notice of Allowability

Application No.

10/659,960

Examiner

Stephen Yam

Applicant(s)

MCQUEEN, ALEXANDER M.

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to April 22, 2005.
2. ☒ The allowed claim(s) is/are 11-13, 15-19 and 21-35.
3. ☒ The drawings filed on 24 November 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Rafter on May 16, 2005.

The application has been amended as follows:

Cancel Claims 10, 14, and 20.

Replace Claim 11 with:

11. A method of optical reading according to Claim 33, wherein the step of rotating the image comprises synchronizing rotation of the image with a timing cycle of raster scan line reading of the image sensor array.

Replace Claim 12 with:

12. A method of optical reading according to Claim 33, wherein the step of rotating the image comprises using a dove prism.

Replace Claim 13 with:

13. A method of optical reading according to Claim 33, wherein the step of rotating the image comprises using a mirror assembly.

Add Claims 34 and 35:

34. A method of optical reading comprising the steps of:
focusing via a first lens system an image of an object being read onto a first two-dimensional image sensor array, wherein the first image sensor array is arranged at a tilt angle α with respect to the first lens system according to the Scheimpflug principle;

focusing via a second lens system an image of the object being read onto a second two-dimensional image sensor array, wherein the second image sensor array is arranged at a tilt angle α with respect to the second lens system according to the Scheimpflug principle, wherein each of the image sensor arrays is disposed in a separate plane; and

detecting, at each of the image sensor arrays, a signal representative of light reflected from the object.

35. An optical reader comprising:
a plurality of at least two sensor arrays with lens combinations, comprised of:
a first lens system;
a first two-dimensional image sensor array for detecting a signal representative of light reflected from an optical code through said first lens system, wherein the first image sensor array is disposed approximately at a tilt angle α with respect to the first lens system;

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a second two-dimensional image sensor array for detecting a signal representative of light reflected from an optical code through said second lens system, wherein the second image sensor array is disposed approximately at a tilt angle α with respect to the second lens system according to the Scheimpflug principle,

wherein each of the image sensor arrays is disposed in a separate plane.

REASONS FOR ALLOWANCE

2. Claims 11-13 and 32-33, previously withdrawn from a restriction requirement, have been rejoined as a result of the allowability of linking claim 30 between the two species of the restriction requirement.

3. Claims 11-13, 15-19, and 21-35 are allowed over the prior art of record.

4. The following is an examiner's statement of reasons for allowance:

The invention as claimed, specifically in combination with projecting a two-dimensional image towards a collection system comprised of one or more two-dimensional sensor arrays, each sensor array arranged at a tilt angle according to the Scheimpflug principle, and detecting the two-dimensional image at differing rotational angles or in separate planes while maintaining the tilt angle of each sensor array with respect to the optical path, is not disclosed or made obvious by the prior art of record.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

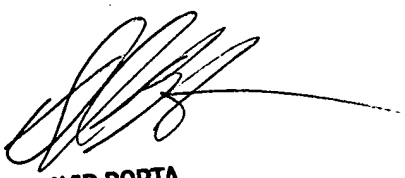
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (571)272-2449. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571)272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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